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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,184	11/25/2003	Peter T. Kazlas	H-360	1183
26245 7590 12/28/2007 DAVID J COLE E INK CORPORATION 733 CONCORD AVE CAMBRIDGE, MA 02138-1002			EXAMINER NGUYEN, KHIEM D	
			ART UNIT 2823	PAPER NUMBER
			MAIL DATE 12/28/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/707,184

Applicant(s)

KAZLAS ET AL.

Examiner

Khiem D. Nguyen

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 24-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on October 02<sup>nd</sup>, 2007 has been entered. A new rejection is made as set forth in this Office Action. Claims (1-15 and 24-26) are pending in the application.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: FLEXIBLE ELECTRONIC CIRCUITS AND DISPLAYS INCLUDING A BACKPLANE COMPRISING A PATTERNED METAL FOIL HAVING A PLURALITY OF APERTURES EXTENDING THERE THROUGH.

### ***Claim Objections***

3. Claims 3 and 4 are objected to because of the following informalities: In claims 3 and 4, line 2, replace "per cent" with --percent--. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

5. Claims 1-15 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (U.S. Patent 6,373,545) in view of Takabayashi et al. (U.S. Patent 6,172,878).

[illegible]

Figure 3

However, Yang et al. is silent about the backplane comprising a patterned metal foil having a plurality of apertures extending therethrough and having a plurality of thin film electronic devices provided on the insulating polymeric material.

**Takabayashi et al.** disclose a backplane for use in an electro-optic display, the



As **Takabayashi et al.** disclose, one of ordinary skill in the art would have been

In view of the above, since **Yang et al.** in combination with **Takabayashi et al.**

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant(s) claimed invention was made to modify Yang et al. reference with a plurality of thin film electronic devices provided on the insulating polymeric material as taught by Takabayashi et al. and a plurality of apertures extending therethrough in order to obtain a multi-element module and a production process capable of suppressing an increase in production costs and preventing a lowering in production yield (see col. 3, line 65 to col. 4, line 7 of Takabayashi et al.).

In re claim 2, as applied to claim 1 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein the apertures are arranged on a rectangular grid (see FIG. 3 of Yang et al. for example).

In re claims 3 and 4, as applied to claim 1 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein a backplane comprising a patterned metal foil 48 having a plurality of apertures extending therethrough, wherein the apertures occupying a certain predetermined percentage area of the patterned metal foil 48 (see FIG. 3 of Yang et al.) but does not explicitly teach or suggest wherein the apertures occupy at least about 30 percent or 60 percent of the area of the patterned metal foil.

However, the percentage range that the apertures occupy the area of the patterned metal foil can be made by routine optimization. Notwithstanding, it would have been an obvious matter of design choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose these particular dimensions because applicant has not disclosed that the dimensions are for a particular



unobvious purpose, produce an unexpected result, or are otherwise critical, and it appears prima facie that the process would possess utility using another dimension. Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233,235 (CCPA 1955). See *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d, 1936 (Fed. Cir. 1990).

In re claim 5, as applied to claim 1 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein the patterned metal foil 48 is coated on both sides with an insulating polymeric material 42 (see col. 6, lines 11-33 and FIG. 3 of Yang et al., for example).

In re claim 6, as applied to claim 5 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein the patterned metal foil 48 is coated on both sides with the same insulating polymeric material 42 (see col. 6, lines 11-33 and FIG. 3 of Yang et al., for example).

In re claim 7, as applied to claim 5 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein the patterned metal foil 48 is coated on its two sides with different insulating polymeric materials (see col. 6, lines 11-33 and FIG. 3 of Yang et al., for example).

In re claim 8, as applied to claim 1 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein each of the thin film electronic devices 16 lies entirely within the area of one aperture in the metal foil 48 (see col. 6, lines 34-41 and FIG. 3 of Yang et al., for example).

In re claim 9, as applied to claim 1 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein each of the thin film electronic devices 16 extends across a plurality of apertures in the metal foil 48 (see col. 6, lines 34-41 and FIG. 3 of Yang et al., for example).

In re claim 10, as applied to claim 1 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including an electro-optic display comprising a backplane according to claim 1 (see col. 6, lines 11-33 and FIGS. 3-4 of Yang et al., for example).

In re claim 11, as applied to claim 10 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including an encapsulated electrophoretic electro-optic medium (see col. 6, lines 11-33 and FIGS. 3-4 of Yang et al., for example).

In re claim 12, Yang et al. disclose a backplane for use in an electro-optic display, the backplane comprising a metal foil 48 coated on at least one side with an insulating polymeric material 42 (see col. 6, lines 11-33) and having an thin film electronic device provided on the insulating polymeric material 42, (see col. 6, lines 34-41 and FIGS. 3-4, for example), the backplane further comprising at least one conductive via 44, 50 extending through the polymeric material 42 and electrically connecting at



least one of the thin film electronic device 16 to the metal foil 48 (see col. 6, lines 28-64 and FIGS. 3-5, for example).

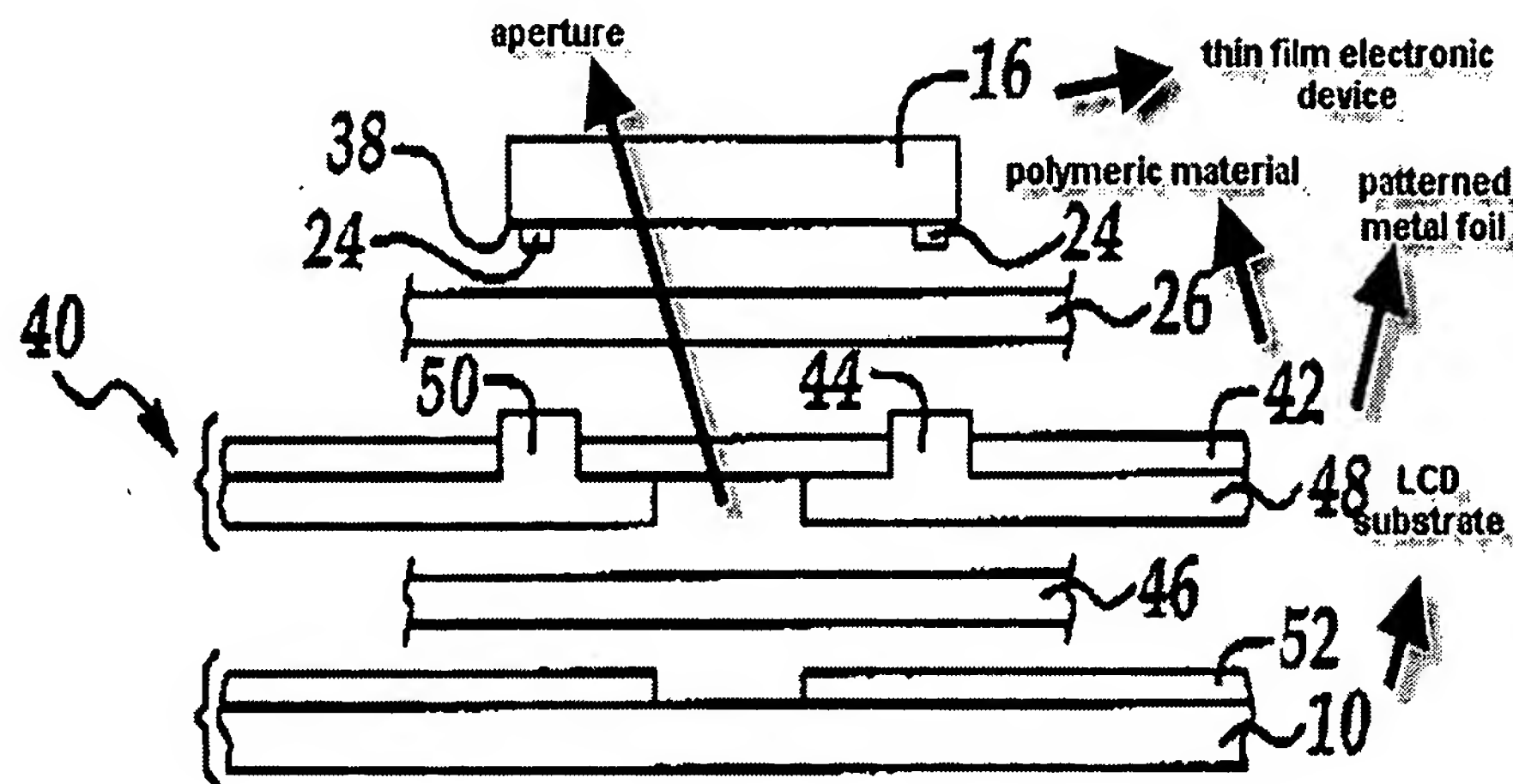


Figure 3

However, Yang et al. is silent about a plurality of thin film electronic devices provided on the insulating polymeric material.

Takabayashi et al. disclose a backplane for use in an electro-optic display, the backplane comprising a plurality of thin film electronic devices 2 provided on the liquid crystal display (LCD) substrate 50 (see col. 8, lines 42-59 and FIG. 5B, for example).

As Takabayashi et al. disclose, one of ordinary skill in the art would have been motivated to provide a plurality of thin film electronic devices on the insulating polymeric material in order to obtain a multi-element module and a production process capable of suppressing an increase in production costs and preventing a lowering in production yield (see col. 3, line 65 to col. 4, line 7 of Takabayashi et al.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant(s) claimed invention was made to modify Yang et al. reference with a

plurality of thin film electronic devices provided on the insulating polymeric material as taught by Takabayashi et al. in order to obtain a multi-element module and a production process capable of suppressing an increase in production costs and preventing a lowering in production yield (see col. 3, line 65 to col. 4, line 7 of Takabayashi et al.).

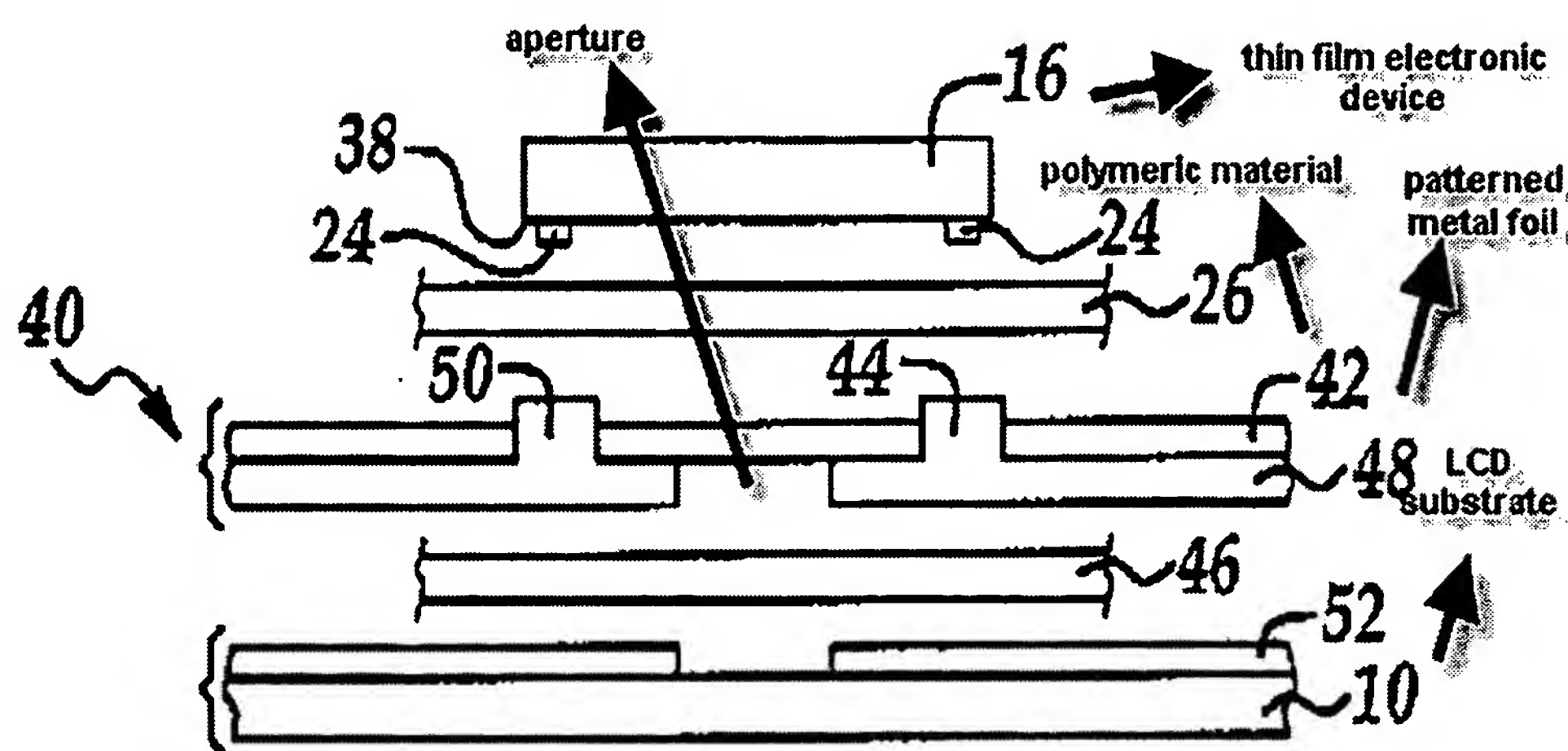
In re claim 13, as applied to claim 12 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein the metal foil 48 serves as at least one of a power plane (see col. 6, lines 28-33 of Yang et al.).

In re claim 14, as applied to claim 12 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including an electro-optic display comprising a backplane according to claim 12 (see col. 6, lines 11-64 and FIG. 3 of Yang et al., for example).

In re claim 15, as applied to claim 14 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein an electro-optic display according to claim 14 in the form a smart card having an electro-optic display thereon, and wherein the metal foil 48 serves to communication between the card and a card reading apparatus (see col. 6, lines 11-64 and FIG. 3 of Yang et al., for example).

In re claim 24, Yang et al. disclose an electro-optic display having a metal substrate 48, the display having a central portion comprising an electro-optic material and means for writing an image on the electro-optic material (see col. 6, lines 11-13), and a peripheral portion extending around at least part of the periphery of the central portion, the peripheral portion having an aperture extending through the metal substrate 48, by

means of which apertures the electro-optic display may be stitched to a flexible medium (see col. 6, lines 16-64 and FIGS. 3-5, for example).



**Figure 3**

However, Yang et al. is silent about a plurality of apertures extending through the metal substrate.

Takabayashi et al. disclose a backplane for use in an electro-optic display, the backplane comprising a plurality of thin film electronic devices 2 provided on the liquid crystal display (LCD) substrate 50 (see col. 8, lines 42-59 and FIG. 5B).

As Takabayashi et al. disclose, one of ordinary skill in the art would have been motivated to provide a plurality of thin film electronic devices on the insulating polymeric material in order to obtain a multi-element module and a production process capable of suppressing an increase in production costs and preventing a lowering in production yield (see col. 3, line 65 to col. 4, line 7 of Takabayashi et al.).

In view of the above, since Yang et al. in combination with Takabayashi et al. disclose that a plurality of thin film electronic devices capable of provided on the LCD

substrate. It is obvious that the peripheral portion also including a plurality of apertures extending through the metal substrate.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of applicant(s) claimed invention was made to modify Yang et al. reference with a plurality of thin film electronic devices provided on LCD substrate as taught by Takabayashi et al. and the peripheral portion having a plurality of apertures extending through the metal substrate in order to obtain a multi-element module and a production process capable of suppressing an increase in production costs and preventing a lowering in production yield (see col. 3, line 65 to col. 4, line 7 of Takabayashi et al.).

In re claim 25, as applied to claim 24 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein the peripheral portion of such a display is free from the electro-optic material (see col. 6, lines 11-33 and FIG. 3 of Yang et al., for example).

In re claim 26, as applied to claim 24 above, Yang et al. in combination with Takabayashi disclose all claimed limitations including the limitation wherein the peripheral portion extends completely around the central portion so that the entire periphery of the electro-optic display can be stitched to the flexible medium (see FIGS. 3-5 of Yang et al., for example).

***Response to Applicants' Amendment and Argument***

6. Applicants' arguments with respect to claims 1-15 and 24-26 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Uchida et al. (U.S. Patent 5,889,325) discloses a semiconductor device includes an insulation film formed on a metal substrate.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D. Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:30 AM - 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Khiem D. Nguyen/  
Examiner, Art Unit 2823

/KN/  
December 21, 2007